



# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

**OIL AND GAS DOCKET NO. 08-0275327**

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**THE APPLICATION OF PETROPLEX ENERGY, INC. FOR AN AMENDED COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, MCFARLAND SWDS LEASE WELL NO. 1D, GLASCO (DEVONIAN) FIELD, ANDREWS COUNTY, TEXAS**

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**HEARD BY:** Andres J. Trevino P.E., Technical Examiner  
Terry Johnson, Hearings Examiner

### APPEARANCES:

#### APPLICANT:

Flip Whitworth  
Rick Johnston  
Don Hale  
Rick Davis, Jr.

#### REPRESENTING:

Petroplex Energy, Inc.

#### PROTESTANTS:

James Bostic  
Kelly Herring  
Thomas H. Richter

Frontier Supply, Inc.

#### OBSERVER:

Brenton Hirschfeld

Self

### PROCEDURAL HISTORY

Application Filed:	January 17, 2012
Request for Hearing:	March 16, 2012
Notice of Hearing:	March 30, 2012
Date of Hearing:	May 22, 2012
Proposal For Decision Issued:	September 14, 2012

**EXAMINERS' REPORT AND PROPOSAL FOR DECISION****STATEMENT OF THE CASE**

Petroplex Energy, Inc.(Petroplex) requests authority pursuant to Statewide Rule 9 to amend their existing disposal permit to operate their McFarland SWDS Well No. 1D in Andrews County as a commercial disposal well. In addition to the commercial authority request, Petroplex is requesting an increase in volume and an increase in injection pressure. The McFarland SWDS Well No. 1D was originally permitted in 1975 to dispose of lease produced water. This application is protested by Kelly Herring owner of Frontier Supply, an adjacent landowner. Mr Herring, is concerned that the increased volumes and increased pressures from the proposed commercial authority will in the future contaminate fresh water supplies.

**DISCUSSION OF THE EVIDENCE****Applicant's Evidence**

The subject well is a permitted disposal well. Amoco Production Company was initially issued an injection permit for the Annie Long "A" R/A "A" Well No. 6 on March 12, 1975. The permit was later amended on June 5, 1986. The amended permit renamed the Annie Long "A" R/A "A" Well No. 6 as the McFarland SWDS Well No. 1D, approved an exception to the packer setting depth of 12,250 feet. The current disposal permit, Permit No. 06067 allows a maximum of 5,000 barrels per day of produced saltwater to be injected at a subsurface depth from 13,080 feet to 13,125 feet into the Fusselman formation. The maximum operating surface injection pressure authorized is 1,500 psig. Petroplex purchased the McFarland SWDS Well No. 1D from Apache Corporation in May 2008. Petroplex wishes to amend the permit to allow commercial disposal authority, an increase in permitted disposal volume to 12,500 barrels per day, and an increase in maximum injection pressure to 2,500 psig.

The McFarland SWDS Well No. 1D was drilled and completed in July 1974 as a producing well. The well was deepened into the Fusselman formation in May 1975 to a depth of 13,125 feet. The well is perforated in the Fusselman formation at a depth between 13,080 feet and 13,120 feet. The well has 439 feet of 11 3/4" surface casing cemented to surface, and 4,826 feet of 8 5/8" intermediate casing cemented to surface. The subject well has approximately 12,548 feet of 5 1/2" casing, cemented with 1,815 sacks of cement with a top of cement at approximately 4,820 feet as determined by a temperature survey. The well has a 3 1/2" liner cemented with 50 sacks of cement set from 12,325 feet to 13,125 feet. Although a new groundwater determination letter is not required, the original letter dated in 1975 and more recent evidence from plugged wells in the area were provided to identify the base of the usable quality water. The Texas Commission on Environmental Quality recommends that usable-quality ground water be protected from the surface to a depth of 1,700 feet.

The current injection is through 2 7/8" tubing set on a packer at 12,250 feet which is set 75 feet above the top of the 3 1/2" liner and 830 feet above the approved injection interval. The current permit issued on June 5, 1986 allows the packer setting depth of 12,250 feet, granting an exception to the packer setting requirements, which ordinarily requires the packer set no higher than 100 feet above the permitted disposal interval. The injection interval will remain the same, between 13,080 feet and 13,125 feet. The proposed maximum injection volume will increase from 5,000 BWPD to 12,500 BWPD of produced salt water. The proposed maximum injection pressure will increase from 1,500 psig to 2,500 psig.

The McFarland SWDS Well No. 1D began injection on a non-commercial basis in 1983 with initial disposal volumes of 120 barrels per month. Disposal volume increased since the 2009 Petroplex takeover, to a rate of 22,000 barrels per month. The source of Petroplex disposal water is from the Fina Schuhmacher Well No. 1. A total of 19.77 million barrels of saltwater has been injected into the Fusselman with no identified problems with the injection activity or the well.

A review of wells within a 1/4 mile of the McFarland SWDS Well No. 1D is ordinarily not required unless the injection interval is being amended, Petroplex is not amending the injection interval. Although not required, Petroplex conducted a review of all wells within 1/2 mile of the disposal well. There are sixteen oil or gas wellbores within a 1/2 mile radius of the disposal well. The majority of the wells (10) are plugged, the remainder produce oil from the Devonian at a depth of 12,500 feet (2 wells) or the Ellenburger formation at a depth of 13,800 feet (1 well). Additionally, there are two shallow (5,250 foot & 6,054 foot TD) dry holes and an Oxy injection well. Therefore, only one producing well penetrates any zones below 13,000 feet.

Petroplex will upgrade the McFarland SWDS facilities to handle commercial operations. Currently water is being piped to the McFarland SWDS well. Petroplex will place new storage tanks over a liner and construct a firewall around the tanks. The size of the facility pad will be approximately 2.5 acres. The unloading area will have a concrete pad to catch any fluids that may be spilled during the unloading operations. The unloading area will have a sump with an automatic pump that will pump any fluids back to the storage tanks. The facility will be automated with electronic level detectors and electronic valves which will prevent the overfilling of storage tanks. Petroplex will design and construct the surface facilities to meet or exceed all Commission requirements for commercial facilities.

Petroplex plans to use the proposed well to dispose of produced water and frac water generated as a result of the current and future development of the Wolfberry play in eastern Andrews County. In the Wolfberry play wells, the thick Spraberry trend interval is combined with the thick Wolfcamp zones. The wells require large, multi-stage fracs that use large quantities of water. The wells later produce the frac water which requires disposal. Each Wolfberry well will flow back approximately 40-50,000 barrels of water. Petroplex believes that additional disposal facilities are necessary to accommodate the active drilling. There are no public commercial disposal wells that operate within a 15 mile radius. There is only one private commercial well within a 15 mile radius of the McFarland SWDS Well No. 1D, the Oxy USA University 5-3 Well No. 1D. The Oxy USA University 5-3

Well No. 1D is located approximately 1½ miles south of the McFarland well. Commission records confirm Oxy only disposes of saltwater from its own sources. Petroplex presented a map showing over 200 new permitted drilling locations within a fifteen mile radius of the proposed disposal well. A Petroplex representative stated Clayton Williams Energy was planning to drill 400 wells into the Fasken Fee area south of the proposed disposal well. Petroplex believes their facility is necessary to accommodate ongoing and active drilling occurring in the Wolfberry play which is expanding into northeastern Andrews County. Petroplex believes that the location of the proposed well in an area without any other source for disposal services will reduce the number of trucking miles necessary to move fluids to a disposal well, which results in reducing disposal costs for the operators. Operators in the area consider disposal capacity as a resource that must be maintained and expanded. Without efficient and economical means of disposal capacity, drilling in the Wolfberry play will be negatively affected.

The Petroplex representative stated current disposal wells in Gaines and Andrews County have wait lines in the morning and at times the disposal facilities will "fill up" and turn away drivers forcing them to drive to Ector or Martin County to dispose of water. In addition to the Wolfberry play, Petroplex believes older mature wells in the area will need more economical disposal means offered by a disposal facility located nearby. As oil wells mature, oil production declines while water production increases. Higher disposal costs as a result of high transportation costs will make low volume oil wells less economic. As an operator of oil wells, Petroplex stated disposal fees and disposal trucking costs are the largest lease operating expense on their leases.

Petroplex Energy, Inc. has an active P-5 on file with the Commission, with \$50,000 financial assurance. There are no pending enforcement actions against Petroplex.

Notice of the subject application was published in *The Andrews County News*, a newspaper of general circulation in Andrews County, on December 22, 2011. A copy of the application was mailed on December 30, 2011 to the Andrews County Clerk's Office and the offsetting surface owners and operators within ½ mile of the proposed well. Petroplex has a surface agreement to use the 2.07 acre tract on which the well is located as a disposal well.

### **Protestants' Evidence**

Kelly Guy Herring, the owner and President of Frontier Supply, Inc. is an adjacent surface owner. Mr. Herring had complaints about the road conditions to the facility. He stated the road had ruts, was prone to flooding and is in poor condition in general. Trucks traveling on the road have caused road abuse which has led to soil blowouts which in turn leads to crop damage. Soil blowouts are caused when areas devoid of vegetation expand into vegetated areas by wind forces and truck traffic.

Mr. Herring's engineering experts identified discrepancies in Petroplex's application and questioned whether the proposed commercial disposal well met the Commission's surface casing requirements and packer setting depth requirements. Petroplex stated on it's initial application, dated December 30, 2011, that the base of the useable quality water



(BUQW) is 300 feet instead of 1,700 feet. Further, because the surface casing is set at 439 feet, the administrative personnel may have inadvertently not issued a deficiency letter. Mr. Herring's engineering experts believe the proposed well does not meet the requirements for new commercial wells with short surface casing as noticed in the Commission's April 2011 memo. In summary, the memo states no new commercial disposal wells will be granted permits administratively if the well has short surface casing that does not reach the BUQW. The memo also states any operator may pursue an application that has been administratively denied by requesting a public hearing. The expert further believed the well should not be approved because the packer setting depth is not in compliance with state rules that require the packer be set no higher than 100 feet from the permitted disposal interval. Additionally, the expert noted that current and past filings of Apache's and Petroplex's H-10 indicate the current disposal well is receiving water from sources other than their own, an indication the well is already operating on a commercial basis. The expert also identified pressure and disposal volume irregularities reported on the H-10 that may indicate a problem with the well or a problem with the report.

Mr. Hirschfeld an adjacent landowner, listed himself as an observer but had concerns and questions about Petroplex's proposed operation. As a farmer he was curious of the size of the facility, the health going forward of the surface and groundwater. Mr. Hirschfeld questions were answered by Petroplex personnel.

### **EXAMINERS' OPINION**

The examiners believe that this application to amend the existing permit to allow commercial operations should be approved. Additionally, the examiners believe the packer exception should be continued as there is no evidence the increased pressures or volumes will impact groundwater or damage oil, gas or other mineral formations. The McFarland SWDS Well No. 1D is completed in a manner which will confine disposal fluids to the existing disposal interval in the Fusselman. Surface casing is set and cemented through the upper zone of usable quality water found between the surface and a depth of 300 feet. The intermediate casing set at a depth of 4,826 feet and is cemented to the surface. The cemented intermediate string acts as surface casing protecting the lower fresh water zone found between 1,300 feet to 1,700 feet. The intermediate string will also provide a second layer of protection from releases into the groundwater in the upper zone from 439 feet to the surface. The longstring production casing is cemented up to a depth of 4,820 feet, above the base of the intermediate string to prevent migration from the injection interval. The well has a 3½" liner cemented with 50 sacks of cement set from 12,325 feet to 13,125 feet. There is continuous cement behind the pipe from the base of the liner at 13,125 feet to the top of the surface. There are no oil or gas wells within the ¼ mile radius of the disposal well that will have the potential to serve as conduit for injected fluids to reach the base of the usable quality water. Commercial authority should be approved as it will increase disposal capacity in the area and may minimize the drilling of additional disposal wells in the future. The facility will meet or exceed all Commission requirements for commercial facilities.

The applicant submitted a revised W-14 with the correct depth of the fresh water zone and identified the oil and gas zones within a two mile radius. The applicant's

representative stated the well has not been used in the past for commercial service.

Approval of the requested permit is in the public interest given it is in the public interest to promote the development of the Wolfberry play in Andrews and Gaines County. There are no public commercial disposal wells operating within a 15 mile radius of the McFarland SWDS disposal well. Without the McFarland SWDS disposal well, operators will have to transport disposal water an additional 30 to 60 mile round trip to Martin or Ector Counties. The McFarland SWDS disposal well will reduce truck miles driven. Drilling is increasing in the Wolfberry play which require large, multi-stage fracs to extract the oil. Having a disposal facility close to the Wolfberry wells will increase competition and reduce disposal costs.

The Commission does not have direct jurisdiction over issues regarding truck traffic or road conditions. The evidence indicates that the operation of the subject disposal well and facility will not adversely impact any surface or subsurface useable quality water.

#### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing. Notice of the application was published in *The Andrews County News*, a newspaper of general circulation in Andrews County, on December 22, 2011.
2. Amoco Production Company was initially issued an injection permit for the Annie Long "A" R/A "A" Well No. 6 on March 12, 1975. The permit was later amended on June 5, 1986. The amended permit renamed the Annie Long "A" R/A "A" Well No. 6 as the McFarland SWDS Well No. 1D, approved an exception to the packer setting depth of 12,250 feet. The current permit authorizes daily injection of a maximum of 5,000 barrels of produced saltwater at a surface pressure of up to 1500 psig into the Fusselman formation at a subsurface depth from 13,080 feet to 13,125 feet.
3. Petroplex purchased the McFarland SWDS Well No. 1D from Apache Corporation in May 2008.
4. The McFarland SWDS Well No. 1D was drilled and completed in July 1974. The well was deepened into the Fusselman formation in May 1975 to a depth of 13,125 feet. The well is perforated in the Fusselman formation at a depth between 13,080 feet and 13,120 feet.
5. The McFarland SWDS Well No. 1D currently receives produced saltwater from Petroplex's Fina-Schuhmacher Lease. Since 1983 the well has disposed of 19.77 million barrels saltwater into the Fusselman.
6. Petroplex has applied to add commercial authority and increase disposal volumes and pressures. Petroplex proposes and increase in maximum injection volume from 5,000 BHPD to 12,500 BHPD of produced salt water and an increase in maximum

injection pressure from 1,500 psig to 2,500 psig.

7. The McFarland SWDS Well No. 1D is cased and cemented in a manner to protect usable quality water and insure that injected fluids will be confined to the injection interval.
  - a. The Texas Commission on Environmental Quality recommends that usable-quality water be protected to 1,700 feet in the area of the proposed well.
  - b. The subject well has 439 feet of 11 $\frac{3}{4}$ " surface casing cemented to surface.
  - c. The subject well has 4,826 feet of 8 $\frac{5}{8}$ " intermediate casing cemented to surface.
  - d. The subject well has approximately 12,548 feet of 5 $\frac{1}{2}$ " casing, cemented with 1,815 sacks of cement with a top of cement at approximately 4,820 feet as demonstrated by a temperature survey.
  - e. The subject well has a 3 $\frac{1}{2}$ " liner cemented with 50 sacks of cement set from 12,325 feet to 13,125 feet.
  - e. Injection will be through tubing set on a packer at a depth of 12,250 feet. The well has a packer depth exception first granted on March 12, 1975 and re-issued on June 5, 1986.
8. Continuation of the packer setting depth exception allowing the packer to be set at 12,250 feet will not endanger water quality or mineral resources.
  - a. The original permit issued on March 12, 1975 authorized a packer setting depth of 12,254 feet. The amended permit issued on June 5, 1986 authorized a packer setting depth of 12,250 feet.
  - b. The 830 foot section below the packer is protected with one or two layers of casing and cement. There is 607 feet of cemented casing below the packer and 223 feet of cemented liner and cemented casing below the packer.
  - c. Form W-2 dated May 14, 1975 for the McFarland SWDS Well No. 1D states the productive Devonian found at a depth of 12,514 feet to 12,559 feet is a shale. Shales are considered tight and require extensive fracture stimulations to get them to produce. Other zones within the 830 foot section are not productive.
  - d. The productive section of the Devonian in the immediate area of the McFarland SWDS Well No. 1D has been depleted and is currently being produced by wells  $\frac{1}{4}$  mile and further away from the disposal well.
  - e. Since the 1975 packer setting depth exception was approved, the McFarland

SWDS Well No. 1D has injected 19.77 million barrels of saltwater into the Fusselman with no reported problems from active adjacent operators in the Devonian zone.

9. A ¼ mile area of review is not required for this application. Petrolpex conducted a ½ mile area of review as a precaution. There are 16 wellbores within ½ mile of the disposal well. Ten of the wellbores are plugged and abandoned wells, three are oil producers, two are dry holes and one is an active injection well. The wells are plugged or completed in such a manner that they do not present a potential conduit for fluids to migrate from the injection interval to the base of the usable quality water.
10. There are no public commercial disposal wells operating within a 15 mile radius of the McFarland SWDS Well No. 1D. There is only one private commercial well operating within a 15 mile radius of the McFarland SWDS Well No. 1D, the Oxy USA University 5-3 Well No. 1D. The Oxy USA University 5-3 Well No. 1D is located approximately 1½ miles south of the McFarland well and only disposes of saltwater from its own sources.
11. There are over 200 newly permitted drilling locations within a 15 mile radius of the proposed disposal well. Clayton Williams Energy is planning to drill 400 wells into the Fasken Fee area south of the proposed disposal well.
12. The Wolfberry play wells combine the thick Spraberry trend interval with the thick Wolfcamp zones. The wells require large, multi-stage fracs that use large quantities of water. The wells later produce the water which requires disposal. Each Wolfberry well will flow back between 40,000 to 50,000 barrels of water.
13. Older, mature wells in the area will need economical disposal means offered by a disposal facility located nearby. As oil wells mature, oil production declines while water production increases. Higher disposal costs as a result of high transportation costs will make low volume oil wells less economic.
14. Water disposal fees and disposal trucking costs are the largest lease operating expense on Petroplex leases.
15. Current commercial disposal wells in Gaines and Andrews Counties at times, have wait lines in the morning and the disposal facilities will "fill up" and have to turn away drivers forcing them to drive to Ector or Martin Counties to dispose of water.
16. Due to increasing development of the Wolfberry formation in the northeastern part of Andrews County, use of the McFarland SWDS Well No. 1D as a commercial disposal well is in the public interest to promote this development by providing a safe and economic means of disposal of the fluids associated with drilling and production.
17. Without the McFarland SWDS Well No. 1D , operators will drive an additional 30 to



60 mile round trip to Ector or Martin Counties. The McFarland SWDS disposal well will reduce truck miles driven and is in the public interest as it will provide an economic means of disposal of produced water from mature oil wells.

18. No groundwater contamination or damage to oil, gas, or other mineral formation has occurred as a result of operations at the McFarland SWDS Well No. 1D since the disposal permit was first issued in 1975.
19. Petroplex Energy, Inc. has an active P-5 on file with the Commission, with \$50,000 financial assurance. There are no pending enforcement actions against Petroplex Energy.

### **CONCLUSIONS OF LAW**

1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.
2. All things have occurred to give the Railroad Commission jurisdiction to consider this matter.
3. The use of the proposed commercial injection well is in the public interest.
4. The use of the proposed commercial injection well will not endanger or injure any oil, gas, or other mineral formation.
5. With proper safeguards, as provided by terms and conditions in the attached final order which are incorporated herein by reference, both ground and surface fresh water can be adequately protected from pollution.
6. Petroplex Energy, Inc. has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. Petroplex Energy, Inc. has met its burden of proof and satisfied the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

### **EXAMINERS' RECOMMENDATION**

Based on the above findings and conclusions, the examiners recommend that the application be approved as set out in the attached Final Order.



Andres J. Trevino  
Technical Examiner

Respectfully submitted,



Terry Johnson  
Hearings Examiner

McFarland SWDS # 1D  
API # 42-003-30462  
Petroplex Energy Inc.  
Andrews County, District 08

Exhibit No. 3  
O & G Docket No. 08-0275327  
Date: May 22, 2012  
Petroplex Energy, Inc.

### Disposal Configuration

